

CLAIMS

The invention claimed is:

1. An emergency shutoff system for power machinery, comprising:

a control device housing a transmitter circuit, a receiver circuit, and a processor, the control device configured to be detachably mounted to the power machinery to control an operation thereof;

a wireless device carried by a user and configured to transmit information to the control device, the information including control signals to cause the processor to shut down operation of the power machinery, the control device being configured to transmit a distress signal to a third party located remote from the power machinery, and provide an indication to attract attention of others, wherein transmission of the distress signal is initiated after receiving the control signals to shut down the power machinery;

a communications device communicatively coupled to the control device to transmit the distress signal to the third party; and

wherein the control device is configured to operate in a plurality of different modes, individual ones of the plurality of different modes being configured to perform a distinct function, and wherein selective operation of a single emergency switch provided on the wireless device is configured to cause the control device to operate in the plurality of different modes including disabling operation of the power machinery and preventing a third party from inadvertently initiating operation of the power machinery from a remote location, the disabling of the power machinery triggers the communications device to transmit the distress signal to the third party.

2. The system of claim 1, further comprising:

a visual indicator and an audible device, both being configured to be mounted to the power machinery and activated by the user by pressing the emergency switch to cause the power machinery to shut down and to provide a visual and audible indication of the user's location.

3. The system of claim 2, wherein the visual indicator comprises a strobe light, a flashing light, and the audible device comprises a siren.

4. The system of claim 1, wherein the communications device comprises one of a cellular communications device or a landline communications device.

5. The system of claim 1, wherein the wireless device is further configured to transmit a signal to the control device to perform one or more of a plurality of external functions by transmitting a signal in a predetermined sequence of operations.

6. The system of claim 1, further comprising a global positioning system (GPS) communicatively coupled to the control device, and the GPS is configured to be activated using the wireless device.

7. The system of claim 6, wherein the distress signal activates the GPS to determine the geographic location of the power machinery, the geographic location being used to dispatch rescue personnel to assist the user.

8. The system of claim 6, wherein both the GPS and the communications device are automatically activated by the processor if the user causes the power machinery to be shut down, and the geographic location information determined by the GPS is used to identify a general location of the power machinery, and the audible and visible information is used to pinpoint the location of the power machinery once the general location is determined.

9. The system of claim 1, wherein the control device is configured to operate in a predetermined mode among the plurality of different modes after the emergency switch is pressed by the user a predetermined number of times during a predetermined time period.

10. The system of claim 1, wherein the wireless device is configured to interrupt transmission of a previously initiated distress signal from the control device by operating the emergency switch for a predetermined time period, and wherein the wireless device is further configured to reinitiate the interrupted transmission upon receiving a request from a user of the power machinery.

11. The system of claim 1, wherein the power machinery comprises mobile machinery, or fixed machinery.

12. The system of claim 11, wherein the mobile machinery comprises mobile machinery used in agriculture including harvesting and seeding machines.

13. The system of claim 11, wherein the fixed machinery comprises an assembly plant.

14. The system of claim 1, wherein the control device is configured to trigger operation of a latch relay coil of the power machinery thereby disabling electrical circuit conductivity for at least an injector pump or an energy latch relay coil configured to control operation of the power machinery.

15. The system of claim 1, wherein the control device further comprises:

a communications interface configured to communicate with external devices;

a memory configured to store user programmed information; and

a storage device configured to store user-related information including a plurality of sets of audio recorded information, wherein the processor is configured to control the communications interface, the memory, and the storage device.

16. The system of claim 15, wherein, after receiving an interrupt signal from the user, the processor is configured to interrupt activation of the GPS and the distress signal and instead is configured to dial a list of telephone numbers stored in the memory, the telephone numbers being dialed in a predetermined order until a response is received by the user from a called party.

17. The system of claim 16, wherein if a response is received after dialing a telephone number from the list, a first set of audio information is retrieved from the storage device and communicated by the processor to the called party.

18. The system of claim 16, wherein the processor is configured to reinitiate transmission of the distress signal if no response is received by the user after dialing all the telephone numbers from the list.

19. The system of claim 18, wherein the reinitiated transmission of the distress signal is directed to the rescue personnel and comprises a second set of audio information that is retrieved from the storage device and communicated to the rescue personnel.

20. The system of claim 1, wherein the control device is configured to operate using alternate and direct current voltages.

21. An emergency shutoff system for an assembly plant, comprising:

a control device configured to be detachably mounted to the assembly plant to control an operation of the assembly plant;

a plurality of wireless devices, individual ones of the wireless devices adapted to be carried by a user and configured to transmit control information to the control device to shut off operation of the assembly plant and selectively perform one or more functions including (i) transmitting a distress signal to a third party located remote from the assembly plant, the transmission of the distress signal being initiated after receiving the control information to shut off the assembly plant, (ii) provide an indication to attract attention of others;

a communications device communicatively coupled to the control device to transmit the distress signal; and

wherein the control device is configured to operate in a plurality of different modes, and wherein a single emergency switch provided on individual ones of the wireless devices is configured to enable the control device to be operated in the plurality of different modes including disabling operation of the assembly plant to prevent a third party from inadvertently initiating operation of the assembly plant from a remote location.

22. The system of claim 21, wherein individual ones of the plurality of wireless devices are configured to communicate with the control device to shut off operation of the assembly plant.

23. The system of claim 21, further comprising:

a visual indicator and an audible device, both being configured to be mounted to the assembly plant and activated by the user by operating the emergency button to provide a visual and audible indication of the user's location.

24. The system of claim 23, wherein the visual indicator comprises a strobe light, a flashing light, and the audible device comprises an audible alarm.

25. The system of claim 21, wherein the communications device comprises one of a cellular communications device or a landline communications device.

26. The system of claim 21, wherein the wireless device is further configured to transmit a signal to the control device to perform one or more of a plurality of external functions by transmitting a signal in a predetermined sequence of operations.

27. The system of claim 21, wherein the control device is configured to operate in a predetermined mode among the plurality of different modes after the emergency switch of at least one of the wireless devices is pressed by the user a predetermined number of times during a predetermined time period.

28. The system of claim 21, wherein the individual wireless devices are configured to interrupt transmission of a previously initiated distress signal from the control device by pressing the emergency switch for a predetermined time period, and wherein the individual wireless devices are further configured to reinitiate the interrupted transmission upon receiving a request from respective users of the assembly plant.

29. The system of claim 21, wherein the control device further comprises:

a communications interface configured to communicate with external devices;

a memory configured store user programmed information; and

a storage device configured to store user-related information including a plurality of sets of audio recorded information, wherein the processor is configured to control the communications interface, the memory, and the storage device.

30. An emergency shutoff system for controlling a plurality of power machinery, comprising:

a power controller having a relay switch configured to operate in a first and second positions, the first position establishing contact with a power supply and the second position disabling the contact with the power supply, the power controller configured to supply power to the plurality of power machinery;

a control device configured to be detachably mounted to the power controller;

a wireless device carried by a user and configured to transmit control

information to the control device to shut down operation of the plurality of power machinery by causing the relay switch to move from the first position to the second position, the control device being configured to selectively perform one or more functions including (i) transmitting a distress signal to a third party, (ii) provide an indication to attract attention of others;

a communications device communicatively coupled to the control device to transmit the distress signal; and

wherein selective operation of a single emergency switch provided on the wireless device enables the control device to perform a plurality of external functions including preventing a third party from inadvertently initiating operation of the plurality of power machinery from a remote location.

31. The system of claim 30, further comprising:

a visual indicator and an audible device to provide a visual and audible indication of an emergency situation to a third party when the relay switch is caused to move from the first position to the second position.

32. The system of claim 31, wherein the visual indicator comprises a strobe light, a flashing light, and the audible device comprises an audible alarm.

33. The system of claim 30, wherein the communications device comprises one of a cellular communications device or a landline communications device.

34. The system of claim 30, wherein the wireless device is further configured to transmit a signal to the control device to perform a distinct external function among the plurality of external functions by transmitting a signal in a predetermined sequence of operations within a predetermined time period.

35. A system configured to perform emergency shut down of an agricultural machine and contact rescue personnel, the system comprising:

a control device housing a transmitter circuit, a receiver circuit, and a processor, the control device configured to be detachably mounted to the agricultural machine to shut off operation of the machine, the control device including:

a processor;

a communications interface configured to communicate with external devices;

a memory configured store user programmed information; and

a storage device configured to store user related information including a predetermined list of telephone numbers to which distress calls are selectively initiated by the user, and a plurality of sets of audio recorded information;

a visual and audible device provided on the agricultural machine and communicatively coupled to the control device, the control device configured to initiate operation of the visual and audible devices;

a wireless remote controller carried by a user and configured to transmit control signals to the control device, the receiver circuit of the control device

configured to receive the control signals, the control signals are provided to the processor to shut down operation of the agricultural machinery, the transmitter circuit of the control device is configured to transmit a distress signal to a third party located remote from the agricultural machinery while activating operation of the visual and audible devices;

a communications device communicatively coupled to the control device to transmit the distress signal to the third party; and

wherein the control device is configured to operate in a plurality of different modes, individual ones of the plurality of different modes being configured to perform a distinct function, and wherein a single switch provided on the wireless remote controller is configured to initiate the plurality of different modes of operation of the control device including an ability to disable operation of the agricultural machine and prevent a third party from inadvertently initiating operation of the agricultural machine from a remote location, and the wireless remote controller is configured to interrupt transmission of a previously initiated distress signal from the control device by pressing the single switch for a predetermined time period within a predetermined time period after transmitting the distress signal.

36. The system of claim 35, wherein the visual indicator comprises a strobe light, a flashing light, and the audible device comprises an audible alarm.

37. The system of claim 35, wherein the communications device comprises one of a cellular communications device, satellite communications device, or a landline communications device.

38. An emergency shutoff system for power machinery, comprising:
a controller configured to disable a power supply for power machinery;
a wireless device supported by a user and configured to transmit control information to the controller to shut down operation of the power machinery, the controller further configured to selectively perform one or more functions including (i) transmitting a distress signal to a third party, (ii) providing an indication to attract attention of the third party; and
a communications device communicatively coupled to the controller to transmit the distress signal,
wherein the wireless device includes a single emergency switch, selective operation of the single emergency switch enables the controller to perform a plurality of external functions including preventing the third party from inadvertently initiating operation of the power machinery from a remote location.

39. The system of claim 38, further comprising:
a visual indicator and an audible device to provide a visual and audible indication of an emergency situation, experienced by a user of the power machinery, to the third party.

40. The system of claim 39, wherein the visual indicator comprises a blinking light, strobe light, a flashing light, and the audible device comprises an audible alarm.

41. The system of claim 38, wherein the communications device comprises one of a cellular communications device, a satellite communications device, or a landline communications device.

42. The system of claim 38, wherein the wireless device is further configured to transmit a signal to the controller to perform a distinct external function among the plurality of external functions by transmitting a signal in a predetermined sequence of operations within a predetermined time period.

43. The system of claim 38, wherein the controller comprises a bridge rectifier to enable reverse polarity of input power to the controller.

44. The system of claim 38, wherein the controller is configured to have a two second delay between a first activation of the emergency switch and a second activation of the emergency switch by a user carrying the wireless device.

45. An emergency shutoff method for power machinery, comprising:

detachably mounting a control device to the power machinery to control the power machinery, the control device including a transmitter circuit, a receiver circuit, and a processor;

transmitting information from a wireless device, carried by a user, to the control device to cause the processor to shut off operation of the power machinery;

after receiving an indication of the shut off of the power machinery, transmitting a distress signal to a third party located remote from the power machinery;

providing an indication to attract attention of others by activating visual and audible devices provided on the power machinery; and

selectively operating an emergency switch provided on the wireless device to cause the control device to perform distinct ones of a plurality of external functions including an ability to disable operation of the power machinery and prevent a third party from inadvertently initiating operation of the power machinery from a remote location.

46. The method of claim 45, wherein activating the visual and audible devices comprises activating a strobe light and a siren.

47. The method of claim 45, wherein transmitting the distress signal comprises transmitting the distress signal via one of a cellular communications device or a landline communications device.